

## CLAIMS

1. A method for preparation of a porous gelatin material in the form of spheres with a continuous pore structure, the method comprising the steps of preparing a homogeneous water-based gelatin solution;  
5 adding an emulsifier with an HLB value >9;
- 10 adding a first composition comprising an organic solvent and an emulsifier with an HLB value >9;  
adding a second composition comprising an organic solvent and an emulsifier with an HLB value <8; and  
allowing the gelatin material to solidify.
- 15 2. A method for preparation of a cast, three-dimensional, porous gelatin structure which can be obtained by preparing a homogenous water-based gelatin solution;  
adding an emulsifier with an HLB value >9;  
adding a first composition comprising an organic solvent and an emulsifier with an HLB value >9; and  
20 casting the gelatin solution in a mould.
- 25 3. A method as claimed in claim 1 or 2, further comprising the step of chemically crosslinking the gelatin material.
- 30 4. A method as claimed in claim 3, wherein the chemical crosslinking is carried out with poly- or bifunctional isocyanate compounds, such as hexamethylenediisocyanate or toluenediisocyanate, poly- or bifunctional aldehydes, such as glutardialdehyde, or with formaldehyde.
- 35 5. A method as claimed in any one of claims 1-4, wherein the emulsifier with an HLB value >9 is selected from the group consisting of Tween 80, Tween 40, Myrj 52 and Brij 58.
6. A method as claimed in any one of claims 1 or 3-5, wherein the emulsifier with an HLB value <8 is

selected from the group consisting of Span 85, Span 65 and Atmos 300.

7. A method as claimed in any one of claims 1-6, wherein the organic solvent is selected from the group 5 consisting of cyclohexane, toluene, paraffin oil and industrial benzene.

8. A method as claimed in claim 7, wherein the organic solvent is cyclohexane.

9. A porous gelatin material in the form of spheres 10 with a continuous pore structure produced by preparing a homogeneous water-based gelatin solution;

adding an emulsifier with an HLB value >9;

adding a first composition comprising an organic solvent and an emulsifier with an HLB value >9;

15 adding a second composition comprising an organic solvent and an emulsifier with an HLB value <8; and allowing the gelatin material to solidify.

10. A cast, three-dimensional, porous gelatin structure which can be obtained by

20 preparing a homogenous water-based gelatin solution;

adding an emulsifier with an HLB value >9;

adding a first composition comprising an organic solvent and an emulsifier with an HLB value >9; and casting the gelatin solution in a mould.

25 11. Use of a porous gelatin material or a cast, three-dimensional, porous gelatin structure, produced as claimed in any one of claims 1-8, as carrier for cells.

12. Use as claimed in claim 11, wherein the biocompatible, porous material or the cast, three-dimensional, 30 porous gelatin structure is used for culture of artificial skin, artificial organs, fatty tissue and blood vessels.

35 13. Use of a porous gelatin material or a cast, porous, three-dimensional gelatin structure produced as claimed in any one of claims 1-8 for making an implant.

14. A method as claimed in any one of claims 2-8, wherein the cast three-dimensional gelatin structure is selected among tubes, ears and in-vivo-like structures.

15. A method for implanting a biocompatible, porous gelatin material as claimed in claim 9 or a cast, three-dimensional, porous gelatin structure as claimed in claim 10 as carrier for cells in an individual for production of substances, comprising implanting said biocompatible, porous gelatin material or said cast, three-dimensional, porous gelatin structure in the individual and subsequently allowing the cells on the biocompatible, porous material or the cast three-dimensional, porous gelatin structure to produce said substances.